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SMALL FARMER ADJUSTMENTS:
PORTUGAL'S ENTRY INTO THE EEC

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Small Farmer Adjustments --
Portugal's Entry into the EEC

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Entry into the EEC and adoption of the Common Agricultural Policy (CAP) will create mixed blessings for small farmers in Portugal. Preferred EEC markets may develop for some commodities, especially fruits and vegetables. However, for many important enterprises and a number of inputs, private costs and returns will be significantly altered, in most cases resulting in substantially lower farm incomes. This is especially true in northern Portugal where most small farms are located. In southern Portugal, many small farms also face substantial income reductions, especially if they continue with their current enterprise choices. In the south, however, a few alternative enterprises exist for small irrigated farms that will allow them to maintain reasonable income levels.

In recent years, Portugal has supported agriculture with a set of policy incentives that are significantly out of step with the CAP pricing structure. These include substantially higher prices for most grains and milk which have become major enterprises on small farms; slightly higher prices for sunflowers, meat animals and fowl; and lower prices for tomatoes and traditional wine.

On the input side, fertilizer and mixed feed have been subsidized. Some of these subsidies have already been reduced or removed. Future changes will further decrease the profitability of grain and milk production as these input costs must conform also to CAP price levels. Labor costs in Portugal are lower than CAP and are expected to rise causing some shifts to more capital

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intensive agricultural technologies. These input and output policy changes will occur gradually over a ten year period with full conformity to CAP policies expected by 1996.

A further change will involve off-farm work. A significant number of small farms are operated principally by women and other family members while the adult men hold off-farm jobs, often in other European countries. This is especially true in Northern Portugal. Access to employment opportunities in other EEC countries is expected to improve for Portuguese workers following entry into the EEC.

The purpose of this paper is to describe the importance of small farms in Portuguese agriculture, to identify the principal commodities produced on these small farms, and to relate these commodities to projected price changes as Portugal adjusts prices to conform to CAP policy. In the final section some policy alternatives are discussed concerning how the Portuguese may respond to the new economic environment facing small farms. We begin with a description of two large but very different small farm regions.

Small Farm Regions

Two principal agricultural regions with substantially different farm structures, natural resources, climate and agricultural enterprises are discussed and compared in this section. They are the "Entre Douro e Minho" region of northwestern Portugal and the "Alentejo" region of southern Portugal.

The Entre Douro e Minho region is characterized by small scale intensive agriculture. It includes a flat coastal plain on the West and more mountainous terrain inland. Milk and corn are the principal commodities. Other farm products include potatoes, corn silage and wine grapes. A significant amount of land is planted to forage crops, such as rye grass, for dairy cattle feed. Often, a combination of these commodities will be produced by each small farm in a very intensive year round use of the limited land resource including summer irrigation. This region provides most of the immigrant labor exported to the EEC countries.

There have been substantial fixed investments made on many of these small farms in recent years, including farm buildings, terraces, flood irrigation systems and rural residences. Much of this investment has been encouraged by favorable price and credit policies and capital subsidies (dairy facilities) and funded, in part, by outside income (rural residences). These fixed investments, which are geared to a small size, part-time agricultural structure, have contributed to raising income levels in the recent past, but in some cases have added additional rigidity to the region's ability to adjust to the new economic environment of the CAP. This is especially true with regard to

farm size expansion and enterprise changes. Despite the level of fixed investments on these farms, however, the level of technology employed is the lowest within Europe and is very labor intensive.

The second region, the Alentejo, is a large rolling plain in Southern Portugal. It occupies an area of 2.6 million hectares, about 30 percent of mainland Portugal. It is an area of semi-arid agriculture with annual rainfall of 500-600 millimeters concentrated in the winter months. Agriculture in the Alentejo is basically dryland, with small areas of irrigation (about 3 percent of the arable land). Dams and wells provide the irrigation water, and plans for new dams could more than double the existing irrigated area. Land quality is quite variable, and over one-half of the arable land is considered unsuitable for cultivation.

Wheat is the principal crop in the Alentejo, grown on about 260,000 hectares or about one-half of the cultivated area. Oats at 20 percent of the cropped area and barley at 10 percent are two other principal dryland crops. Sunflower production, which has doubled in recent years, occupies about 5 percent of the area. Rice on 14,000 hectares and tomatoes on 9,000 hectares are the principal irrigation crops along with corn (22,000 hectares).

Livestock production is important in the Alentejo also, especially on the less productive soils. Beef, sheep and swine are the principal livestock activities, with over one-half of the meat production coming from swine.

Small Farms Defined

Farm size definition can have many dimensions: land area, gross output, and labor employment among others. Thus a small farm measured by one dimension, say land area, in one region may have a substantially different size classification in another region. This is true in looking at the two quite different regions from the north and south of Portugal. We have followed Cordovil's classification of farm size, using five land area divisions: very small, small, medium, large and very large. For the Entre Douro e Minho region of intensive small farm agriculture in northern Portugal, these divisions occur at 3, 5, 50 and 200 hectares. In the dry Alentejo region of the south, the size divisions are 5, 20, 100 and 200 hectares.

For Portugal as a whole the very small farm category includes three-fourths of all farms with less than 15 percent of the area in farms and one-third of farm output (Table 1). By contrast in Entre Douro e Minho, 80 percent of the farms, 29 percent of the area and 58 percent of the output is represented by very small farms (Table 2). The Alentejo is at the other extreme with a somewhat different farm size classification and structure. Here, very small farms account for only about one-half of all farms, a mere 2 percent of the area in farms and less than

10 percent of the output (Table 3). In the Alentejo, as contrasted with the north, very large farms dominate the agriculture with 70 percent of the land and 55 percent of the output.

Projected Price Changes

The relevant price levels to use in analyzing Portuguese small farmer problems are those in effect immediately prior to entrance into the EEC (1985) and those anticipated at the conclusion of the ten year adjustment period (1996). A carefully conducted study of future Portuguese prices was used as the principal source of the price information. In Table 4, prices for a number of important agricultural commodities for 1985 and projections for 1996 are presented.

The principal cereal crops of wheat, barley, rice and corn along with milk will all experience a decline of about 40 percent in real prices over this price adjustment period. These are the most serious price adjustments. Prices for sheep, beef, pork and poultry, will decline also, but only in the 15 to 20 percent range. Sunflowers and wine will experience very little price change, while tomatoes are expected to show a 23 percent price increase. These rather large differences in price changes among commodities will certainly cause enterprise choices to shift, where feasible, and will result in structural change and/or increased demands for greater government help in income maintenance for producers where new more profitable enterprises cannot be easily established.

It should be noted that these projected price adjustments reflect current CAP price expectations. CAP agricultural prices are still among the highest in the world for major agricultural regions. Thus, as negotiations on agricultural policy are concluded under the current GATT discussions, it is probable that there will be further reductions in CAP real price levels as well. Portuguese real agricultural prices, therefore, could undergo reductions even beyond those projected here.

Farm Size and Enterprise Choice

Since there are substantial differences among commodities in the direction and size of the projected price adjustments, the impact on small Portuguese farms depends initially on the major enterprises they currently use or could readily adopt. Wheat, for example, is produced principally on large farms in the dry lands of the south. Therefore, the large projected 44 percent decline in price will not appreciably affect small farm income (Tables 5-7). Corn, on the other hand, is produced principally on small farms throughout the country and the projected 41 percent price decline will seriously impact small farms, especially in the Entre Douro e Minho region. Sunflowers with a small price decline and tomatoes with a modest price increase are principally large farm crops in the Alentejo region, therefore, their

expected positive price adjustment will not benefit small farmers unless they are able to change enterprises. Livestock enterprises of sheep, beef and milk are all important small farm enterprises, especially in the north. Unfortunately, these are all projected to experience modest to severe price declines.

Thus, small farms in northern Portugal appear to have no major existing profitable farm enterprise alternatives that will allow them to maintain current income levels. They will have to rely on a combination of improved technology, farm size expansion, government income support and outside employment. Some opportunities may exist on a limited scale for fruit and vegetable production but these enterprises will demand greater management skills and close coordination with marketing services. In the south, there may be some limited possibilities in tomato production for a few small farms with access to water and appropriate technology. Sunflowers are currently grown principally as a fallow crop on large farms. It is uncertain whether they would be a viable small farm alternative.

Some Policy Alternatives

Agriculture in Portugal has received significant price supports and subsidies in recent years. This situation has stimulated the production of crops like wheat to be grown on marginal land and has permitted a vast system of small farm agriculture to prosper under low levels of technology, especially in the north. Entry into the EEC and the subsequent adoption of the CAP pricing structure will change all that, with many major small farm enterprises having to accept commodity price reductions of up to 40 percent. Current agricultural policy negotiations under GATT may reduce CAP prices further toward world competitive levels, causing additional income stress for Portuguese agriculture.

Price adjustments of the magnitude currently projected, will force substantial changes on the farmers of Portugal, especially small farmers with limited production resources. To cushion the impacts of this adjustment process, there are several policy initiatives that can be undertaken to limit the initial income impact and to facilitate the adjustment to a changed and generally lower price structure. The one policy tool not available, of course, is price policy, since that will be set by CAP. But, Portugal can engage in capital subsidies and income transfers, and will benefit from millions of dollars of EEC aid to help finance some of the transition faced by the agricultural sector.

Income transfers--Direct income payments to farmers are allowed under CAP. Under this option, farm incomes could be maintained at some minimum level indefinitely, or at least through the adjustment process. While income support targeted to specific needy groups, such as small farms, is probably more cost efficient to society than general price supports that help

everyone, it represents a visible social cost and it will likely be politically difficult to maintain on the scale necessary to support a large number of small farmers at current income levels. However, given the magnitude of the anticipated price and income changes, the paucity of viable alternatives, and the significant structural changes required, some transitory direct income support will probably be necessary for a few years.

Technological change--Low labor costs, high farm prices and substantial amounts of off-farm income have allowed a labor intensive, low technology agriculture to exist on small farms. Technological change that is output increasing and/or unit cost reducing will be desirable and will likely be one of the first significant adjustments to occur. These changes can be accelerated by policies to enhance the transfer of information and the availability of new technology. In most cases this will likely require the adaptation and transfer of technology from other countries, such as more productive crop varieties and livestock, not the creation of entirely new technology. Some of this is already occurring in the poultry, fruit and vegetable sectors. An important constraint here will be the level of human capital skills available on many small farms that are operated by older men and women.

Enterprise change--Except for tomatoes and sunflowers in the south and perhaps wine grapes elsewhere, there is little opportunity for farmers in Portugal to shift to profitable alternative enterprises that currently exist on any scale. There may be some limited opportunities for fresh fruit and vegetable production for the early season markets of northern Europe, but the size of this potential market and the level of access provided by entrance to the EEC is yet to be determined. Organizational changes at the marketing level are expected to be as great, if not greater than changes needed at the production level.

With beef prices expected to fall less than dairy, there will probably be marginal gains for some farmers to shift from a dairy to a beef emphasis, for example by fattening calves. Most small dairy farmers do not have specialized dairy facilities so there will be little investment loss through this change.

The current enterprise selection on small farms is organized around very intensive year round use of the land resource; hence in most cases there is little to be gained from enterprise combination changes to make better use of slack off season land. Changing to more intensive land using activities such as tomatoes and other vegetable crops, in place of forages and grains for livestock, could boost farm incomes, though as noted above the size of the potential market is unknown.

Structural change--Eventually, small farm agriculture will have to adjust to the realities of tighter profit margins and thus operate on a larger volume to provide an adequate income for

the farm family. In most cases this will require the consolidation of many small units, the retirement of older farmers and an off-farm exodus of a considerable amount of the labor now employed on small farms. This means fewer people will need to acquire or control more of the existing resources (land), many of the tasks now performed manually will need to be mechanized and, for livestock farmers, investments in labor saving facilities will be necessary. This is all required in order to raise output per level of labor input. Some investment will be needed, also, to expand field size and some disinvestment will likely occur in outmoded buildings.

The building of rural residences in the north is on the rise, as expatriate workers return from jobs abroad and an aging farm population retires. Thus, there will likely be some market for many of the rural residences now on the small farms and for the sale of new building sites. Also, in some situations, where the small farm is a secondary source of income, the sensitivity to commodity price declines may be less and the pressure for change may be reduced.

Conclusion

Portuguese agriculture is likely to face great stress during the next few years of transition to new, mostly lower CAP price levels. Small farmers will likely face a disproportionate amount of commodity price changes compared to large farmers. Furthermore, because of the products they produce, many of these farmers are older and have fewer technical skills necessary to cope with technical and structural changes required if farm incomes are to be maintained. Income transfers are also likely to be inadequate for maintaining the livelihood of many small farmers.

The restructuring of farms that today are small and fragmented is a necessary long term solution. But here the analysis of causes and possible solutions is fairly thin. Portugal has underinvested over the years in economics and agricultural economics so there is not a large pool of trained analysts. The EEC aid funds available to Portugal are fairly limited in their use in research or for the development of trained manpower. The development of sound affordable policies to ease the transition of small farmers is going to represent a significant challenge in Portugal for many years.

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TABLE 1

PORTUGAL

FARM SIZE DISTRIBUTION: NUMBER, AREA AND AGRICULTURAL GNP
1970-80-81

Farm Size	Farms		Area		Production	
	Number	%	Hectares	%	Value ^a	%
Very Small	569,878	76.5	698,244	13.5	37,623,180	34.2
Small	136,322	17.5	784,219	15.1	26,487,669	24.1
Medium	38,128	4.9	801,101	15.4	18,682,835	17.0
Large	5,733	0.7	636,053	12.3	8,528,290	7.7
Very Large	2,752	0.4	2,262,227	43.7	18,702,544	17.0
TOTAL	779,813	100	5,181,844	100	110,024,518	100

Source: Rolo, 1986

^a Thousand Escudos

TABLE 2

ENTRE DOURO E MINHO
FARM SIZE DISTRIBUTION: NUMBER, AREA AND AGRICULTURAL GNP
1979-80-81

Farm Size	Farms		Area		Production	
	Number	%	Hectares	%	Value ^a	%
Very Small < 3 ha	141,461	80.0	120,507	29.4	9,267,516	58.5
Small 3 - 5 ha	24,524	13.9	88,751	21.6	2,102,228	13.3
Medium 5 - 50 ha	9,986	5.7	105,134	25.7	3,829,142	24.2
Large 50 - 200 ha	626	0.4	57,939	14.1	282,610	1.8
Very Large > 200 ha	56	0.0 ^b	37,484	9.2	358,328	2.2
TOTAL	176,653		409,815		15,839,824	100

Source: Rolo, 1986

^a Thousand Escudos

^b Less than 0.1%

TABLE 3

ALENTEJO
FARM SIZE DISTRIBUTION: NUMBER, AREA AND AGRICULTURAL GNP
1979-80-81

Farm Size	Farms		Area		Production	
	Number	%	Hectares	%	Value ^a	%
Very Small (< 5 ha)	25,075	53.8	40,889	2	1,980,154	9.9
Small (5-20 ha)	10,960	23.5	100,512	4.9	2,355,351	11.8
Medium (20-100 ha)	7,550	16.1	294,675	14.5	3,026,159	15.2
Large (100-200 ha)	1,291	2.8	191,182	9.4	1,701,828	8.5
Very Large (> 200 ha)	1,772	3.8	1,412,385	69.2	10,865,852	54.5
TOTAL	46,648	100	2,039,643	100	19,929,344	100

Source: Rolo, 1980

^a thousand escudos

TABLE 4

PROJECTED CHANGES IN REAL PRODUCT PRICES

Product	Year		Percent Change
	1985	1996	
	-----Escudos----- per kilogram		
Wheat	40.50	22.87	- 43.5
Barley	36.50	21.87	- 40.1
Corn	38.50	22.87	- 40.6
Sunflower	74.16	67.56	- 8.9
Tomato	8.30	10.22	+ 23.01
Sheep	602.55	479.60	- 20.4
Beef	427.35	361.29	- 15.5
Milk	40.38	24.88	- 38.4
Rice ¹	47.80	29.02	- 39.2
Wine ^{1*}	310.80	307.03	- 1.2
Poultry	201.2	188.37	- 6.8

Source: Avillez, et.al., 1987

¹ Tangermann, et.al., 1985.

* Per 1000 liters

TABLE 5

PORTUGAL
AGRICULTURAL GNP BY PRODUCT AND FARM SIZE

1979-80-81

Farm Size	Wheat		Barley ^b		Corn		Sunflower ^c		Tomato		Sheep		Beef		Milk		Wine		Potatoes	
	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%
Very small	152	5.2	333	18.1	1,633	49.3	3	.9	58	5.0	1,026	27	2,165	34.9	1,721	47.1	7,626	34.3	3,637	53.1
Small	335	11.6	527	28.9	939	28.3	9	2.7	278	24.3	602	15.9	1,377	22.2	2,430	35.8	6,899	31.1	2,056	30.0
Medium	501	17.3	368	20.1	387	11.7	27	8.3	271	23.6	502	13.2	912	14.8	509	13.9	4,513	20.3	926	13.6
Large	488	16.8	174	9.4	119	3.5	72	21.7	135	11.7	368	9.7	453	7.3	200	5.5	1,621	7.3	133	1.9
Very Large	1,423	49.1	425	23.5	235	7.2	214	66.4	405	35.4	1,298	34.2	1,290	20.8	284	7.7	1,556	7.0	93	1.4
TOTAL	2,899	100	1,826	100	3,313	100	323	100	1,147	100	3,796	100	6,197	100	3,657	100	2,221	100	6,845	100

Source: Condovil et.al., 1987

^a Million Escudos

^b Include other cereals

^c Include other oil seeds

TABLE 6

ENTRE DOURO E MINHO
AGRICULTURAL GNP BY PRODUCT AND FARM SIZE
1978-80-81

Farm Size	Corn		Beef		Milk		Potato		Wine		Sheep	
	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%
Very Small	532	53.1	855	56.8	560	56	801	58.7	2,124	56	213	84.6
Small	183	18.2	219	14.5	142	14.2	192	13.9	5,990	15.8	21	8.3
Medium	273	27.2	409	27.1	282	28.1	364	26.7	1,003	26.5	17	6.8
Large	61	0.6	21	1.5	16	1.6	93	0.6	64	1.7	.2	0.1
Very Large	9	0.9	1	0.1	1	0.1	1	0.1	1	0.1	.1	0.1
TOTAL	1,003		1,507		1,001		1,365		3,792		2,520	

Source: Cordovil, et.al., 1987

^a million escudos

TABLE 7

ALENTEJO
AGRICULTURAL GNP BY PRODUCT AND FARM SIZE
1979-80-81

Farm Size	Milk		Wheat		Barley ^b		Corn		Sunflower		Tomate		Sheep		Beef	
	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%	Value ^a	%
Very Small < 5 ha.	92	16.2	43	2.1	16	2.9	15	9.1	4	1.4	35	7.2	53	3.9	93	5.8
Small 5 to 20 ha.	106	18.7	156	7.7	44	7.9	25	15.1	13	4.3	101	20.6	62	4.6	125	7.8
Medium 20 to 100 ha.	113	20.1	316	15.6	85	15.3	26	16.1	38	12.4	64	13.0	138	10.3	96	12.3
Large 100 to 200 ha.	50	8.8	236	11.6	63	11.5	12	7.0	48	15.7	41	8.4	114	8.5	136	8.6
Very Large > 200 ha.	204	36.2	1280	63.0	345	62.4	86	52.6	203	66.2	250	50.8	975	72.7	1045	65.5
TOTAL	565	100	2033	100	553	100	164	100	307	100	492	100	1341	100	1594	100

Source: Cordovil, et.al., 1987.

^a million escudos

^b include other cereals

^c include other oil seeds